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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/889,918

12/12/2001

Louis Guillou

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05/16/2006

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EXAMINER

HENNING, MATTHEW T

ART UNIT

PAPER NUMBER

2131

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/889,918	Applicant(s) GUILLOU ET AL.	
	Examiner Matthew T. Henning	Art Unit 2131	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 19-26 and 28 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19-26 and 28 is/are rejected.
- 7) ☒ Claim(s) 19-26 and 28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2005 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 2131

This action is in response to the communication filed on 3/3/2006.

### **DETAILED ACTION**

Claims 19-26 and 28 have been examined. Claims 1-18 and 27 have been cancelled.

All objections and rejections not set forth below have been withdrawn.

#### ***Specification***

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: In this case, the specification lacks any mention of “the body of integers modulo  $n$ ”. See the rejection of claims 19-26 and 28 under 35 USC 112 1<sup>st</sup> Paragraph below.

#### ***Claim Objections***

Claims 20-26 and 28 are objected to because of the following informalities:

Claims 20-23 and 25-26 use ‘x’ to represent multiplication. This is inconsistent with the independent claims as well as the specification which use ‘.’ instead.

Claim 24 recites “The process according to claim 20” which is inconsistent with its parent claim. Claim 24 should read “The computer implemented process”.

Claim 25 recites “A process according to claim 19 for” which is inconsistent with its parent claim. Claim 25 should read “The computer implemented process according to claim 19”.

Claim 26 recites “The process of claim 25” which is inconsistent with its parent claims. Claim 26 should read “The computer implemented process according to claim 25”.

Claim 28 recites “the computer code comprising: obtaining...using”. This incorrectly implies that the computer code performs the claimed method steps. However, in reality this is

not the case, but instead computer code causes a computer processor to perform method steps. Therefore, the claim should be amended to indicate that a processor performs the method steps as a result of the computer code.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 19-26 and 28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In the instant application, claims 19 and 28 recite the limitation “the body of integers modulo n”. Although there is support for the “the ring of integers modulo n” there is no support for “the body of integers modulo n”. As such, the ordinary person skilled in the art would be able to determine that the applicants possessed the claimed invention at the time of filing. Therefore, claims 19-26 and 28 are rejected for failing to comply with the written description requirement of 35 USC 112 1<sup>st</sup> Paragraph.

Art Unit: 2131

1 The following is a quotation of the second paragraph of 35 U.S.C. 112:

2 The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the  
3 subject matter which the applicant regards as his invention.

4  
5 Claims 19-26 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being  
6 indefinite for failing to particularly point out and distinctly claim the subject matter which  
7 applicant regards as the invention.

8 Regarding claims 19 and 28, the use of parenthesis around " $Q_i, G_i$ " and "for  $i = 1, \dots, m$ "  
9 renders the claims unclear. This is due to the fact that the ordinary person skilled in the art  
10 would not be able to determine whether contents of the parenthesis was meant to be contained in  
11 the claim language or not. As a result the ordinary person skilled in the art would be unable to  
12 determine the scope of the claims.

13 ***Claim Rejections - 35 USC § 101***

14 35 U.S.C. 101 reads as follows:

15 Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or  
16 any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and  
17 requirements of this title.

18  
19 Claims 19, 25, and 28 rejected under 35 U.S.C. 101 because the claimed invention is  
20 directed to non-statutory subject matter.

21 Regarding claims 19, 25, and 28, a method which merely manipulates data is  
22 claimed.

23 *A claim that requires one or more acts to be performed defines a process.*  
24 *However, not all processes are statutory under 35 U.S.C. 101. Schrader, 22 F.3d*  
25 *at 296, 30 USPQ2d at 1460. To be statutory, a claimed computer-related process*  
26 *must either: (A) result in a physical transformation outside the computer for which*  
27 *a practical application in the technological arts is either disclosed in the*  
28 *specification or would have been known to a skilled artisan (discussed in i)*  
29 *below), or (B) be limited to a practical application within the technological arts*  
30 *(discussed in ii) below). See Diamond v. Diehr, 450 U.S. at 183-84, 209 USPQ at*  
31 *6 (quoting Cochrane v. Deener, 94 U.S. 780, 787-88 (1877)) ("A [statutory]*  
32 *process is a mode of treatment of certain materials to produce a given result. It is*  
33 *an act, or a series of acts, performed upon the subject-matter to be transformed*



Art Unit: 2131

1           Claims 19-26 and 28 are provisionally rejected on the ground of nonstatutory  
2 obviousness-type double patenting as being unpatentable over claims 19-28 and of copending  
3 Application No. 10/089,626. Although the conflicting claims are not identical, they are not  
4 patentably distinct from each other because it would have been obvious to the ordinary person  
5 skilled in the art that quadratic residues could have been used in the place of the non-quadratic  
6 residues.

7           This is a provisional obviousness-type double patenting rejection because the conflicting  
8 claims have not in fact been patented.

9           Claims 19-26 and 28 are provisionally rejected on the ground of nonstatutory  
10 obviousness-type double patenting as being unpatentable over claims 1-20 of copending  
11 Application No. 09/889,958. Although the conflicting claims are not identical, they are not  
12 patentably distinct from each other because claims 1-20 of Application number 09/889,958  
13 contain every element of claims 19-26 and 28 of the instant application and as such are not  
14 patentably distinct from the copending applications claims.

15           This is a provisional obviousness-type double patenting rejection because the conflicting  
16 claims have not in fact been patented.

17           Claims 19-26 and 28 are provisionally rejected on the ground of nonstatutory  
18 obviousness-type double patenting as being unpatentable over claims 1-20 of copending  
19 Application No. 09/889,958. Although the conflicting claims are not identical, they are not  
20 patentably distinct from each other because claims 1-20 of Application number 09/889,958  
21 contain every element of claims 19-26 and 28 of the instant application and as such are not  
22 patentably distinct from the copending application's claims.

Art Unit: 2131

1 This is a provisional obviousness-type double patenting rejection because the conflicting claims  
2 have not in fact been patented.

3 Claims 19-26 and 28 are provisionally rejected on the ground of nonstatutory  
4 obviousness-type double patenting as being unpatentable over claims 13-24 of copending  
5 Application No. 09/869,966. Although the conflicting claims are not identical, they are not  
6 patentably distinct from each other because claims 13-24 of Application number 09/869,966  
7 contain every element of claims 19-26 and 28 of the instant application except that the variable  
8 'k' is greater than 1. However, it is obvious that the variable 'k' could be an integer greater than  
9 1 and as such are not patentably distinct from the copending application's claims.

10 This is a provisional obviousness-type double patenting rejection because the conflicting  
11 claims have not in fact been patented.

### 12 *Conclusion*

13 Claims 19-26 and 28 have been rejected.

14 Applicant's amendment necessitated the new ground(s) of rejection presented in this  
15 Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).  
16 Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

17 A shortened statutory period for reply to this final action is set to expire THREE  
18 MONTHS from the mailing date of this action. In the event a first reply is filed within TWO  
19 MONTHS of the mailing date of this final action and the advisory action is not mailed until after  
20 the end of the THREE-MONTH shortened statutory period, then the shortened statutory period  
21 will expire on the date the advisory action is mailed, and any extension fee pursuant to 37  
22 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,




Art Unit: 2131

1 however, will the statutory period for reply expire later than SIX MONTHS from the date of this  
2 final action.

3 Any inquiry concerning this communication or earlier communications from the  
4 examiner should be directed to Matthew T. Henning whose telephone number is (571) 272-3790.  
5 The examiner can normally be reached on M-F 8-4.

6 If attempts to reach the examiner by telephone are unsuccessful, the examiner's  
7 supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the  
8 organization where this application or proceeding is assigned is 571-273-8300.

9 Information regarding the status of an application may be obtained from the Patent  
10 Application Information Retrieval (PAIR) system. Status information for published applications  
11 may be obtained from either Private PAIR or Public PAIR. Status information for unpublished  
12 applications is available through Private PAIR only. For more information about the PAIR  
13 system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR  
14 system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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22 Matthew Henning  
23 Assistant Examiner  
24 Art Unit 2131  
25 3/12/2006  
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